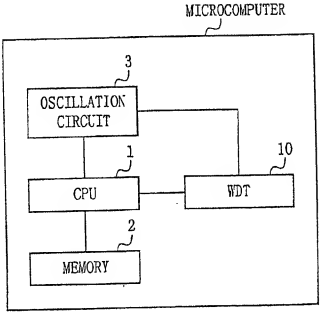

FIG. 1

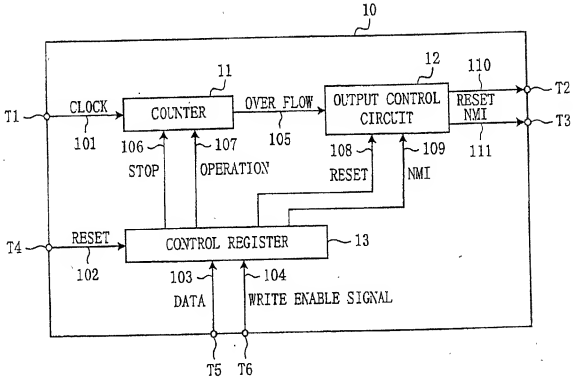
10
11
12
110
T1
CLOCK
COUNTER
OVER FLOW
OUTPUT CONTROL CIRCUIT
RESET NMI
T2
T3
101
106
107
105
108
109
111
STOP
OPERATION
RESET
NMI
T4
RESET
CONTROL REGISTER
13
102
103
104
DATA
WRITE ENABLE SIGNAL
T5
T6

FIG. 2

FIG. 3A

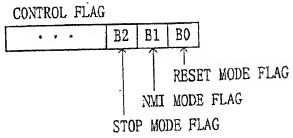

FIG. 3B

OPERATIONAL MODE	B2	B1	B0
RESET MODE	×	×	0
NMI MODE	×	0	1
STOP MODE	0	1	1

×:DON'T CARE

EP0221411A2

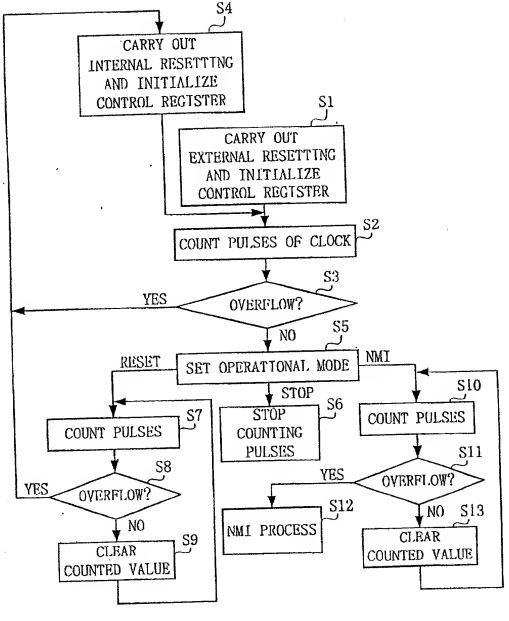

FIG. 4

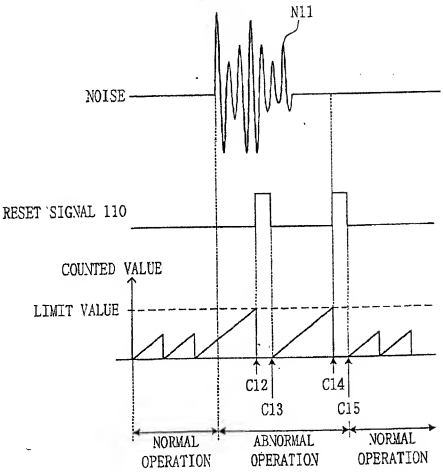
N11
NOISE
RESET SIGNAL 110
COUNTED VALUE
LIMIT VALUE
C12
C13
C14
C15
NORMAL OPERATION
ABNORMAL OPERATION
NORMAL OPERATION

FIG. 5

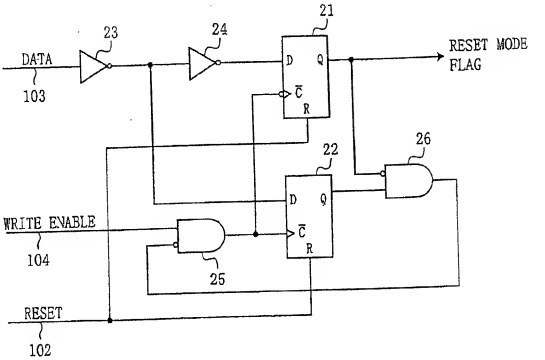
21
23
24
DATA
103
D
Q
C
R
RESET MODE
FLAG
26
22
D
Q
C
R
WRITE ENABLE
104
25
RESET
102

FIG. 6

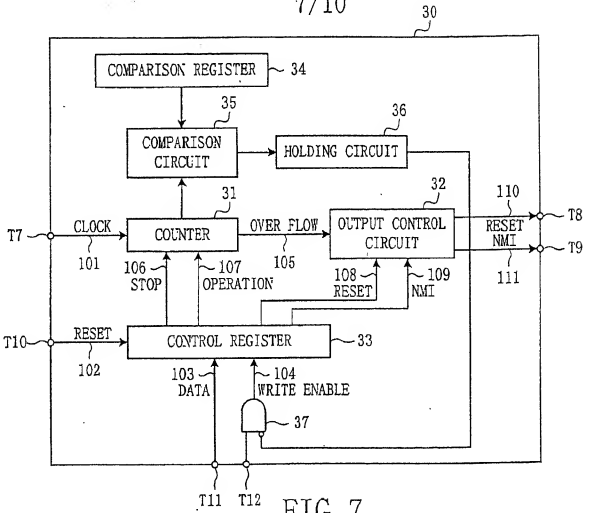
30
COMPARISON REGISTER
34
35
COMPARISON CIRCUIT
36
HOLDING CIRCUIT
31
32
110
T7
CLOCK
COUNTER
OVER FLOW
OUTPUT CONTROL CIRCUIT
RESET
NMI
T8
T9
101
106
STOP
107
OPERATION
105
108
RESET
109
NMI
111
T10
RESET
CONTROL REGISTER
33
102
103
DATA
104
WRITE ENABLE
37
T11
T12

FIG. 7

10021-112004

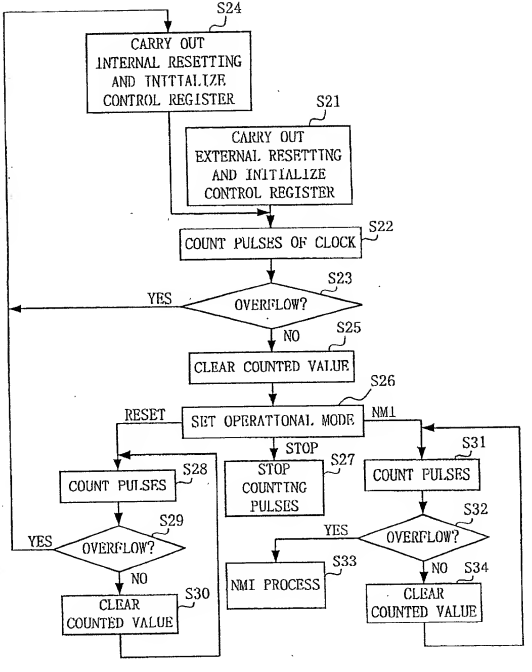

FIG. 8

	ABNORMAL OPERATION	FACTOR
A	· TRANSISTOR(Tr) DOES NOT OPERATE · CLOCK FOR WDT IS NOT PROVIDED	· BREAKAGE OF POWER SOURCE LINE · BREAKAGE OF OSCILLATOR
B	· Tr OPERATES · CLOCK FOR WDT IS PROVIDED · SOFTWARE DOES NOT RUN	· ABNORMAL OPERATION IN CPU, ROM, RAM, ETC. (SUCH AS VOLTAGE DROP IN CPU)
C	· Tr OPERATES · CLOCK FOR WDT IS PROVIDED · SOFTWARE RUNS · TEMPORARY ABNORMALITY	· COMMON NOISE (E.G. IN POWER SOURCE) · ERROR IN SOFTWARE DESIGN (E.G. INDEFINED CONDITION)

FIG. 9

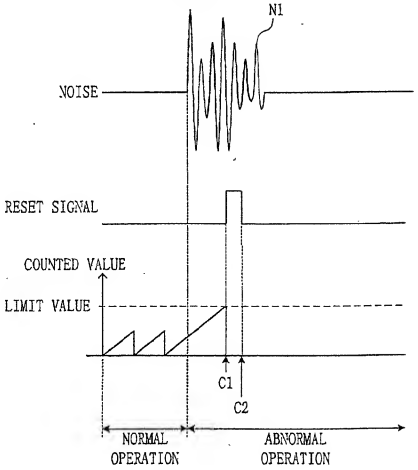
N1
NOISE
RESET SIGNAL
COUNTED VALUE
LIMIT VALUE
C1
C2
NORMAL OPERATION
ABNORMAL OPERATION

FIG. 10